

REMARKS

The pending claims have been rejected on the combination of Djennas, Ogawa and Pace.

It is respectfully submitted that the pending claims are patentably distinct from the combinations asserted in the outstanding rejection. The outstanding rejection primarily relies on the combination of two very different embodiments disclosed by Djennas. Specifically, the first embodiment (Figs. 4-6) illustrates a lead frame based package with a floating die. As acknowledged by the Examiner, this embodiment does not contemplate the use of an adhesive tape. This is not surprising since the embodiment illustrated in Figs. 4-6 contemplates the use of a floating die that is NOT exposed on the bottom surface of the package as required by both independent claims 1 and 7 of the present application. Additionally Figures 4-6 of Djennas contemplate a traditional lead frame based package arrangement where the leads protrude from the sides of the package rather than being exposed on the bottom surface of the package as specifically required by both independent claims 1 and 7 of the present application. Since neither the die nor the bottom surfaces of the leads are intended to be exposed in the first embodiment of Djennas, it would make no sense whatsoever to use a tape to support those structures during encapsulation. The independent claims have been further amended to make it clearer that the claimed invention is directed at packages where the die and the lead frame are exposed on the bottom surface of the resulting package.

Since the first embodiment does not utilize a tape to carry the lead frame or die, the outstanding rejection relies on the tape used in the sixth embodiment of Djennas. However, Figure 20 illustrates a substrate based package that does NOT incorporate a lead frame. As will be appreciated by those familiar with the art, unlike most traditional lead frame based packages, substrates used in a substrate based package IS traditionally exposed on the bottom surface of the package. In the embodiment illustrated in Fig. 20, the substrate 100 (i.e., a PCB) is a solid piece with a hole cut out in the region of the die. Since the substrate is solid, encapsulant does NOT extend between adjacent contacts and does not fill gaps between adjacent contacts as required by independent claims 1 and 7. Thus, the encapsulant will only contact the tape in the central region of the package around the die. In contrast, in the claimed lead frame based arrangement, the encapsulant extends between adjacent leads such that it contacts the tape between adjacent leads. It is respectfully submitted that this is a significant difference that would prevent a person of ordinary skill in the art at the time of the present invention from applying the tape used as a carrier in a substrate based package to use a tape in the claimed manner in a lead frame based package.

It is believed that the significant differences between packaging substrate based packages and lead frame based packages would make it highly unlikely that a person of ordinary skill in the art at the time of the present invention would be motivated to combine the first and sixth

embodiments of the Djennas reference to produce a package in accordance with the claimed inventions. Indeed, it is respectfully submitted that the fact that Djennas suggests using the tape in combination without remotely suggesting that the tape can be used in lead frame based packaging is strong evidence of the fact that a person of ordinary skill in the art at the time of the present invention would NOT have been motivated to make the combination proposed in the outstanding rejection.

The secondary Ogawa and Pace references that are utilized in the outstanding rejections were cited for other reasons and do not make up for the deficiencies in the base combination applied in the outstanding rejections. Accordingly, it is respectfully submitted that claims 1 and 7 are patentable over the art of record for at least the reasons set forth above and that the outstanding rejections of those claims should be withdrawn.

Claims 2 – 6 each depend either directly or indirectly from independent claim 1 and are therefore respectfully submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 1. Additionally, some of these dependent claims require additional elements that when considered in the context of the claimed arrangements further patentably distinguish the art of record.

Claims 8 – 10 each depend either directly or indirectly from independent claim 7 and are therefore respectfully submitted to be patentable over the art of record for at least the reasons set forth above with respect to claim 1 and 7 discussed above. Additionally, these dependent claims require additional elements that when considered in the context of the claimed arrangements further patentably distinguish the art of record.

In view of the foregoing, it is respectfully submitted that all pending claims are patentable over the art of record and that this case is in condition for allowance. Should the Examiner have any remaining concerns regarding the present application, he is encouraged to contact the undersigned at the telephone number set out below.

Respectfully submitted,
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